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IN THE CLAIMS:

Please amend the claims as follows:

1. (previously presented) A membrane ultrasonic transducer for converting between electrical and acoustic energies, the transducer comprising:

a substrate;

a plurality of membranes supported on the substrate;

at least first and second electrodes associated with each of the plurality of membranes;

electrical interconnections between the first electrodes of the plurality of membranes, the electrical interconnections within the substrate and free of active electronics within the substrate;

electrical connections of the second electrodes in at least two electrically isolated groups; and

separate signal traces for each of the at least two electrically isolated groups;

wherein the separate signal traces comprises signal traces of a flexible circuit positioned adjacent the membranes.

2. (original) The transducer of Claim 1 further comprising:

a first pad on the substrate connected with the electrical interconnections;

wherein the first electrodes correspond to at least two elements of the transducer.

3. (cancelled)

4. (cancelled)

5. (previously presented) The transducer of Claim 1 wherein the separate signal traces comprise conductive material deposited on an edge of the substrate, the membranes being on a top of the substrate.

6. (previously presented) The transducer of Claim 1 wherein the separate signal traces comprise deposited conductors in a layer above the membranes, the deposited conductors extending over a length greater than at least two membranes.

7. (original) The transducer of Claim 1 wherein the electrical interconnections comprise a grounding plane.

8. (previously presented) A method for interconnecting ground electrodes of a capacitive membrane ultrasound transducer, the method comprising:

(a) forming a common electrical interconnection within a semiconductor substrate;

(b) forming a plurality of membranes associated with the electrical interconnection as one of at least two electrodes;

(c) grounding the common electrical interconnection;

(d) forming electrodes electrically isolated from the electrical interconnection;

(e) connecting the electrodes into at least two groups, each group electrically isolated the other groups; and

(f) positioning a flexible circuit adjacent the membranes and electrodes of the at least two groups.

9. (original) The method of Claim 8 wherein (c) comprises connecting the electrical interconnection to ground without active electronics.

10. (cancelled)

11. (currently amended) A membrane ultrasonic transducer for converting between electrical and acoustic energies, the transducer comprising:

a substrate;

a plurality of membranes supported on a top side of the substrate, the plurality of membranes grouped into at least two elements; and

at least one conductive trace deposited on an edge surface of the substrate, the edge surface being a side of the substrate adjacent to and different than the top side of the substrate, the at least one conductive trace electrically connected with at least one of the at least two elements;

wherein the at least one conductive trace comprise pads on the edge surface.

12. (cancelled)

13. (original) The transducer of Claim 11 wherein the at least one conductive trace comprises at least two conductive traces electrically isolated from each other, the at least two conductive traces corresponding to the at least two elements, respectively.

14. (original) The transducer of Claim 11 wherein the at least one conductive trace connects a trace on the top of the substrate to a trace on a bottom of the substrate.

15. (original) The transducer of Claim 11 further comprising:

electrical interconnections within the substrate, the electrical interconnections common to the at least two elements.

16. (original) The transducer of Claim 11 wherein the at least one conductive trace connects with a trace on the top of the substrate, the trace on the top of the substrate formed in a polymer layer above the plurality of membranes.

17. (currently amended) A method for electrical routing in a capacitive membrane ultrasound transducer, the method comprising:

(a) forming a membrane having at least one electrode, the membrane being on a top surface of a substrate;

(b) depositing a pad conductor on an edge of the substrate, the edge being a side of the substrate adjacent to and different than the top surface of the substrate; and

(c) electrically connecting the conductor with the at least one electrode.

18. (original) The method of Claim 17 wherein (a) comprises forming the membrane and additional membranes each having at least one electrode; wherein (b) comprises depositing the conductor and additional conductors on the edge; and wherein (c) comprises electrically connecting the at least one electrode of each additional membrane to respective additional conductors on the edge, each electrical connection associated with an electrically isolated element.

19. (original) The method of Claim 17 wherein (b) comprises:

(b1) depositing a metal layer on the edge; and

(b2) separating the metal layer into a plurality of conductors.

20. (original) The method of Claim 17 further comprising:

(d) wire bonding to the conductor.

21. (original) A membrane ultrasonic transducer for converting between electrical and acoustic energies, the transducer comprising:

a substrate;

a plurality of membranes on the substrate;

a polymer layer over the plurality of membranes; and

at least one conductive trace in the polymer layer.

22. (original) The transducer of Claim 21 further comprising:

an additional polymer layer over the plurality of membranes; and

an additional conductor electrically isolated from the at least one conductive trace, the additional conductor being within the additional polymer layer.

23. (original) The transducer of Claim 21 wherein the at least one conductive trace comprises a plurality of conductive traces deposited partially on a top surface of the substrate, where the polymer layer covers and is between the plurality of conductive traces.

24. (original) The transducer of Claim 21 wherein the polymer layer includes polymer between the at least one conductive trace and a top surface of the substrate.

25. (original) The transducer of Claim 21 further comprising:

at least one conductor deposited on an edge of the substrate, the polymer layer being on a top of the substrate, the at least one conductor electrically connected with the at least one conductive trace.

26. (original) The transducer of Claim 21 wherein the plurality of membranes comprise at least two elements, the at least one conductive trace comprising a conductive trace for each of the at least two elements, each conductive trace electrically isolated for the other conductive traces.

27. (original) The transducer of Claim 21 wherein the plurality of membranes comprise at least two elements;

further comprising:

electrical interconnections within the substrate, the electrical interconnections common to the at least two elements.

28. (previously presented) A method for electrical routing in a capacitive membrane ultrasound transducer, the method comprising:

(a) forming a membrane on a substrate;

(b) depositing an insulating layer over the membrane; and

(c) depositing a conductive trace on the insulating layer.

29. (original) The method of Claim 28 wherein (c) comprises patterning a metal layer.

30. (original) The method of Claim 28 further comprising:

(d) forming a channel in the insulating layer;

wherein (c) comprises depositing the conductive trace in the channel.

31. (original) The method of Claim 28 wherein (b) and (c) comprise creating a plurality of conductive traces in different insulating layers, each of the plurality of conductive traces electrically isolated from the other conductive traces.